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1978 PRIEST RIVER EXPERIMENTAL FOREST REPORT

Cal Carpenter

United States Department of Agriculture
Forest Service
INT
Priest River Experimental Forest
Priest River, Idaho 83856

Reply to: 1380 Reports

Date: April 30, 1981

Subject: Priest River Annual Reports

To: Station Director, INT

Enclosed for your information are the Priest River Experimental Forest Annual Reports for 1978 and 1979. These reports reflect the activities conducted on the experimental forest during those years.

CALVIN CARPENTER
Superintendent

Enclosure

cc: Thadd Harrington
Marv Foiles
Northern Forest Fire Laboratory
Idaho Panhandle National Forest
Priest Lake Ranger District
RWU-1206
~~RWU-1451, Ray Hoff~~
~~RWU-2204, Al Harvey~~

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INTRODUCTION

The following report covers the 1978 year of operation of the Priest River Experimental Forest. The Forest and headquarters facilities served as a demonstration area, and field laboratory, for the 67th consecutive year since its establishment in 1911. This year was also the 7th anniversary of the Youth Conservation Corps encampment, operated by the INT Station. Due to expansion in research and YCC programming, living accommodations were filled to capacity. Emergency overflow quarters were provided in the administration-lab building.

HIGHLIGHTS

On May 28th, Sandra Wellner, daughter of past Assistant Station Director Chuck Wellner, was married at the Priest River Experimental Forest to Stephen Wall of Olympia, Washington. The marriage ceremony was held in the small amphitheater near the administration building in front of a backdrop of wildflowers which Chuck and son Kent, had collected and arranged. Sandra and Steve reside in Olympia, Washington.

On June 19, Jerry Rehfeldt, plant geneticist, RWU-1451, started at the headquarters area, elevation 2400 ft., and jogged non-stop to Gisborne Lookout Tower, elevation 5900 ft. Jerry covered the 8-mile uphill distance in one and three-quarters hours.

On November 3, a high velocity wind storm caused forest damage at the higher elevations. Several areas were closed on north and south ridge roads until the following Monday when Station personnel were able to remove the blowdown.

RESEARCH ACTIVITIES

Timber Management Research

The Environmental Grid studies which were established in 1973 were measured at regular weekly intervals. Within the study system there are six separate stations with instrumentation set up to record rainfall, radiation, air temperature, soil temperature, humidity and plant moisture stress (P.M.S.). Required service on the mechanical equipment is accomplished each week. Observation at the varied sites was discontinued September 1st, or shortly after fall rains began.

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A thinning project was conducted within a heavy white birch stand located on 597-B (south ridge) road, southeast from the white pine V.Q. plots and Crows Nest switchback. Plots were established in the thinned area and an adjacent control area to provide a basis for management guidelines and growth projection. This project is an experiment to determine how a birch stand will respond to thinning.

Plots were established in the transect for the purpose of collecting data which will provide both individual tree response and total stand growth information. Site information including ground cover, habitat type, slope and aspect will aid in developing relationships between site characteristics and stand growth. These sites also provide an estimation of the intensity of sunlight under the canopy.

Brush clearings were made in the lower Benton Creek sale area. Two one-acre openings were made in the A portion, one one-acre in the B portion, and additional plots were established for herbicide treatments. No herbicide was applied in 1978. Permanent plots were established in the clearings and in the control area. Growth data plus vegetative cover was recorded for each area. The labor was completed by YCC crews and FSL personnel.

Permanent plot number 151 in Benton Creek was remeasured.

Personnel involved: Marvin Foiles, Russ Graham, Ray Boyd, Jonalea Tonn, Laura Trott, Joan Graves, Margaret Gerber, YCC.

Genetics Research

RWU-1451 began the field season at PREF March 22, 1978. Several thousand containerized seedlings, which were grown at the Moscow FSL greenhouse were transported to the experiment station for transplant as soon as weather permitted.

On May 1st the project began the busy research schedule which proved to be the most active to date. Following is a resume of the completed projects, for the season ending November 5, 1978.

May 1: Sowed western white pine seed in the nursery for blister rust pilot study. Transplanted 500 western white pine and 500 lodgepole pine into the nursery. These transplants are to be used for western gall rust and root performance evaluation studies. Planted 8600 container grown Douglas-fir seedlings in a within-family variation study. Participating personnel: G. Rehfeldt, P. Wells, D. Coffen, C. Armstrong, R. Poe.

June: Observations and readings were completed on western larch plantings in the nursery for casebearer and frost damage. Participating personnel: G. Rehfeldt, P. Wells, D. Coffen.

July: Measured grand fir provenance test seedlings in the nursery planting. Constructed frames and installed same; one at the water supply reservoir, two at the nursery site, one on M-2 road, and two in the North Ridge sale area. These six frames were filled with soil and prepared for planting Douglas-fir seedlings for provenance tests. Fence enclosures were installed around each frame and flagged against wildlife intrustion. Participating personnel included P. Wells and YCC crew members.

August: Nursery fumigation

October: The entire month was utilized in site preparation and planting a large area within the Weidman Arboretum, a clearcut located on M-2 road, and six seedling frames, which were set up in July. Plantings within the frames numbered 7200 Douglas-fir. Lodgepole pine numbering 30,000 were transplanted in the Arboretum and clearcut for research in three different categories, which include regional variation, population variation and family variation. Participating personnel: R. Hoff, G. Rehfeldt, R. Steinhoff, P. Wells, D. Coffen, D. Andrews, C. Armstrong, M. Husong.

From the early spring to late fall season, maintenance responsibilities included regular cultivation for weed control, fertilization, irrigation, constant inspections for disease, insects, and rodents. Participating personnel: P. Wells, D. Coffen, D. Andrews, R. Hoff, G. Rehfeldt, R. Steinhoff.

Range Management and Wildlife Habitat Research

From August 19 to 21 in poor weather, RWU-1705 spent 4½ man days on the Priest River Experimental Forest resampling permanent transects in three study areas located in Lower Benton Clearcut Blocks A and B. Work was done by a two-man field crew consisting of Peter F. Stickney and David J. Ramsden. This work is part of a long-term study of forest succession in the Northern Rocky Mountains.

Research and Development, Forest Residues Utilization

RWU-3255 utilized living quarters in Cottage 3 and lab facilities periodically from June to October. Researchers from FPL Madison, Wisconsin and the FSL, Missoula, Montana conducted "followup" work on an extensive research project relating to monitoring the effects of harvesting,

utilization and fire on soil quality, which was established the previous year. Following is a list of participating personnel:

Mike Larsen	FPL Madison, Wisconsin
Al Harvey	FSL Missoula, Montana
Roger Hungerford	FSL Missoula, Montana
Ron Babbitt	FSL Missoula, Montana
Rick Bandy	FSL Missoula, Montana
Kathy White	Michigan Tech. University, Houton, Michigan
George Teachman	FFL Missoula, Montana
Darrell Winter	FSL Missoula, Montana

ADMINISTRATIVE ACTIVITIES

Fire Protection

All fire hose cabinets (5) were inspected at regular intervals, and were found to be in good working condition.

The "Early Warning" smoke detectors were constantly malfunctioning, causing problems with personnel occupying quarters while working at the station. Investigations are being made in an effort to correct the situation.

The fire plan for the Experimental Forest was discussed during the annual cooperative meeting of the INT Station and the Priest Lake Ranger District. The district asked for approval to park a pumper truck at the headquarters station during the fire season. Agreement was made and a compartment in the four stall storage shelter was made available for parking space. The arrangement provided added protection from the hazards created by the sizable increase in research and YCC personnel utilizing the headquarters facilities and experimental forest areas.

Forest Roads and Trails

Roads 597-B, 597-D and 597-G were bladed by equipment and personnel from the Priest Lake Ranger District and Sandpoint Zone Engineering. It was impossible to complete the job due to frost at higher elevations. Completion is scheduled for 1979.

A late fall wind storm, November 3, caused extensive blowdown in the North Ridge area, on road 597-E. The right-of-way was impassible to heavy hunter traffic for several hours.

Clearing by station personnel was completed November 5.

Brush was removed from a section of 597-A0 road from the junction of 597-J-1 to the Benton Creek stream gaging dam. Labor was furnished by crew members of the YCC.

Diamond International performed the maintenance responsibilities on Road 597-A during the time which was required to haul material harvested from new road right-of-way clearing within the Observatory Point Timber Sale.

A new trail, recommended by Charles Wellner, was established in the Lower Canyon Creek proposed natural area. From the take-off point located 2 miles beyond the junction of 597-F, 597-Q, and 597-G roads, it extends approximately 17 chains, passing through various habitat types and terminates at a scenic point overlooking the Canyon Creek drainage. Work was accomplished by YCC labor.

Timber Sales

PREF M-2

Sale was clearcut, with 100% slash disposal. Tractor skidding with specified restrictions was enforced in order to protect the site for special planting applications. The sale area was designed and cut for the experimental outplanting of lodgepole pine by RWU 1451 and is located in the SW quarter Section 25, T. 58N., R.4W, B.M. Estimated volume, 26 MBF. Purchaser was Larry Dawson, Newport Washington. Termination date on the sale was November 1, 1978. Slash was burned November 13. Personnel involved: Russ Graham, Cal Carpenter, and Priest Lake 3-man crew. Supplementary cleanup will be undertaken in the spring of 1979 by YCC labor.

Observatory Point Timber Sale

New road construction of 597-S-3, 597-M-4, 597-M-7 and reconstruction of 597-C would have been completed in 1978 as scheduled had it not have been for heavy snow fall. Remaining work to be accomplished is final blading, seeding, and mulching, early spring 1979 The project started August 24, 1978 and ended in late November. Following is an itemized account of work completed: 597-C Reconstruction 5 additional C.M.P's (corrugated metal pipe) added to existing system--total 136 linear ft.

597-S-3 New construction, 0.63 miles, 2.74 acres of rightofway clearing, 42 lin. ft. of 18" C.M.P.

597-M-4 New construction, 0.56 miles, 2.28 acres of right-of-way clearing 138 lin. ft. of 18" C.M.P.

597-M-7 New construction, 1.15 miles, 5.82 acres of right-of-way clearing 392 lin. ft. of 18" C.M.P.

A total of 80 loads of sawlogs amounting to approximately 418,730 bd.ft. was removed from the area. The acutal timber harvest is scheduled to begin in the spring of 1979.

Experimental White Pine Norway Spruce

Slash within the sale area was hand-piled by YCC crews, and is scheduled for burning in 1979.

FOREST INFLUENCES

Control Weather Station

Records as revealed in table 1 are taken each day at 1700. This observation has been continuous since 1911. Summaries are made up on a weekly and monthly basis, and submitted to the local news media, various government agencies, state agencies, private industries, universities, public schools, county organizations and private individuals.

Table 2 is comparison of current monthly and annual precipitation with 19-year averages for three different stations in the Benton Creek watershed.

Figure 1 depicts cumulative precipitation for the 1977-1978 water year. The graph also shows comparative trends for the wettest and driest years and a 50-year mean, since 1912.

Fire Weather Station

Since data collections from this station are no longer used for input in the National Network, observations were discontinued in 1978. The site will be maintained for historical significance.

Snow Survey

Table 3 itemizes data collected from Benton Spring and Benton Meadow snow courses from January 1, 1978 to the terimation of the runoff period. Measurements from these two marked courses began in 1973 and have been continued since. Assistance in gathering the data is provided by the Soil Conservation Service, who has been a cooperator since the establishment of the project.

COOPERATION

The regular annual meeting between the Forestry Sciences Laboratory and the Priest Lake Ranger District was held at the Supervisor's Office of the Idaho Panhandle National Forest in Coeur d'Alene, Idaho, February 24, 1978. Those attending from Priest Lake were Dan Montgomery and Ray Raugett; and from FSL were Marvin Foiles, Russ Graham, Ray Boyd, and Cal Carpenter. The main topics of discussion were as follows: YCC camp and other manpower programs, timber sales, planting, thinning, road maintenance, the memo of understanding, and other various related items.

In compliance with a request (4/25/79) from a graduate student enrolled in the School of Forestry at the University of Montana, early spring observations were made by Cal Carpenter, PREF, and notification of flowering progress in Vaccinium was relayed to Patricia Marten who later visited the Experimental Forest and collected the needed samples at the 5000 ft. level on 597-E road.

On July 12, 1978, a request was received from John Kuser, Oregon State University, Department of Forest Science, Corvallis, Oregon. Several soil samples were gathered from designated areas at the 4000-4500 ft. elevation. Collections were made under mature hemlock growth at 2" to 6" depth. Samples were needed to complete a small scale test on relative dependence of western hemlock provenances on mycorrhizae for establishment. Samples collected by Cal Carpenter, PREF.

Gary Long, Entomologist, Washington State University, Pullman, Wash., occupied living quarters during the second week in July while conducting casebearer studies. During this period activities included casebearer pupa sampling and predator prey experiments in varying densities and spatial dispersion.

HEADQUARTERS IMPROVEMENTS AND MAINTENANCE

Early season work and maintenance responsibilities included: grounds cleanup, reopening of winterized buildings, reactivating nursery site water system, and a general inspection of the facilities for possible damage which may have occurred during the winter. All fire protection safety devices were checked and found to be functioning properly.

A. Office Laboratory

Repair in the plumbing system was necessary. A problem occurred in the sewage disposal system, and will probably require corrective action with the coming of early spring when the building is re-opened for the 1979 season. Roof repairs were made and construction of new window well covers is in the process. Basement area was renovated to provide space for lodging YCC staff members and for YCC equipment storage.

A new electric horn was installed for convenience in calling or signaling personnel in outlying areas to answer incoming phone calls.

B. Cottage #1

Three new shower stalls were installed in the basement floor area, complete with three lavatories and venting system. A malfunction in the sewage disposal system required excavation to gain access to a within line stoppage. At a depth of approximately 10 feet, the line was disconnected and the obstruction was removed. A new segment of line was replaced including standpipe with cleanout, and backfilled. Interior ceiling and walls in the garage and basement stairwell were repaired. Electrical feed lines into the facility were modified to improve safety conditions. An 80-gallon hot water heater was added to the existing system to increase the supply of hot water as required to provide the needs for increased YCC use.

C. Cottage #2

The main electrical feed lines required modification. The exterior hanger bracket was relocated to eliminate a possible shorting hazard. A new section of floor and new floor cover was installed in the bathroom, and interior paint was applied. Water pipes in the plumbing system required replacement.

D. Cottage #3

The wall surface in the living room and downstairs bedroom was repaired and redecorated. A new carpet was installed in the livingroom quarters.

E. Cottage #4

Heat cables were installed in the roof valleys to eliminate ice buildup. It was also necessary to remove and replace a basement window frame which had deteriorated as a result of "dry rot".

F. Bunkhouse-Mess hall

The shower-restroom facilities were remodeled in the upstairs and downstairs area. This included four new shower stalls, modification of plumbing, new venting system, new sub-floors, and tile floor covering. The downstairs bedroom (master bedroom) was renovated to make room for refrigeration and water heating appliances. The exterior wood trim was repainted and the window screens were repaired as needed.

G. Shop

The exterior wood trim was repainted. Strong winds lifted several metal roof panels, necessitating replacement of same.

H. Headquarters

A severe lightning storm which occurred July 7, proved to be costly. Several hits in the immediate headquarters surroundings were observed, one which grounded out in the water system causing irreparable damage to the deep submersible water pump. Repair work began mid-morning July 17, with lifting the damaged pump from a depth of 190 feet and disconnecting the suspension column. A replacement unit was ordered from Spokane, and by late afternoon the new pump and control panel was installed to supply the heavy water demand as required by YCC and research crews occupying quarters at the station. After the defective pump was removed, it was discovered that during the last 18 years silt accumulation in the bottom of the well had reached a total depth of 13 feet, which means that at the time of reinstallation the well depth was approximately 177 feet. The pump was reset at a depth of 158-159 feet, within a 49-foot column of water.

A new underground power lead from the control panel to the reservoir was installed. Most of the trench excavation and wire laying was accomplished with YCC labor and completed later by INT personnel. Since that time the system operation has been entirely trouble free.

I. Storage shelters

The storage shelters located near the headquarters area were renovated to make space for added storage. The fuel shelter and fuel pump proved to be in satisfactory condition. It was necessary to repair the electrical power leads to the mess hall. The wood shed was raised and the old log sills were removed. Excavations were made, footings poured, and a new concrete block foundation was installed. The ground level trim will be replaced during the summer season of 1979.

The modifications which were made in the Lodge (Cottage #1), Mess hall-bunkhouse, and installation of a new power control line in the water system were accomplished by Vic Hager and Lyle Cooper from FSL, Moscow.

Two buildings were moved to the headquarters are from outlying locations on the Experimental Forest. One, a portable bunkhouse 12' x 24', and an A-frame structure 10' x 10'. They will be put to use serving as staff quarters and storage facilities for YCC. Personnel and equipment to complete the job were provided by the Forest Service from Sandpoint.

A rail fence was constructed along the county road right-of-way. The distance of more than one-half mile extends from Big Creek to Fox Creek within the Weidman Arboretum, along the frontage of the native and exotic pine plantations. Problems resulting from trespass made the project necessary in order to protect the existing stands plus new plantings installed by RWU-1451. Labor was provided by YCC crews, supervised by INT personnel and YCC staff members.

PERSONNEL

Position	Dates	Name
Superintendent	1/30/65 to present	Cal Carpenter
Maintenance Assistant	1966 to present (intermittent)	Jane Knoke

Meetings, Group Visits, and Inspections

January 26	Marvin Foiles, INT RWU-1206, Moscow, midwinter general inspection, station personnel evaluation, and planning session.
February 2	Paige Ballard and Vic Hager, FSL Moscow, pre-YCC encampment planning.
February 27	Marvin Foiles, INT Moscow, reviewed and revised administrative procedures.
May 10	Russ Graham and Paul Swetik, FSL Moscow, inspected and gathered samples from the water monitoring stations established the previous year within the Observatory Point timber sale.
May 13	WSU field ecology class. Dr. Richard Mack and 21 students.
May 16	Inland Empire Tree Improvement Cooperative (Larch Committee) held a seminar and also toured active field research projects and nursery plantings, at varied sites on the experimental forest.
June 6	Russ Graham, INT Moscow, inspect environmental grid sites and supervise reinstallation of instrumentation at the locations.
June 19	Mike Larsen, Forestry Products Laboratory, Madison, Wisconsin, met with personnel associated with RWU-3255, Forest Residues Utilization, to plan forthcoming seasonal project activities.
June 24	David Gardner, INT Ogden, and Paige Ballard, FSL Moscow, arrived to participate in the YCC camp activation, oversee program planning, and evaluate staff training.
July 10	James Rawlenson, Human Resources Program, WO, accompanied by Paige Ballard, FSL Moscow, arrived to evaluate the INT Station's management of YCC operation.
July 24	Russ Graham, FSL Moscow, inspect project work progress and inspect active timber sale activities.

August 3	Roger Bay, INT Station Director, and Jerry Sesco, AD Planning and Application, Ogden, arrived for a get-acquainted tour. It was Jerry's first visitation and a general tour of the facilities and forest was provided by headquarters personnel.
August 17	Carber Gibbs, INT Deputy Director, Ogden, arrived to participate in the YCC camp termination ceremonies. While here he toured the experimental forest and inspected the headquarters facilities.
August 20	Marvin Foiles, and Russ Graham, FSL Moscow, inspect new road construction and reconstruction as set up in the Observatory Point timber sale specifications.
September 11	Robert Garland and Stacia Bevin, Cultural Resource consultants, arrived to conduct an archaeological survey.
September 20	Russ Graham, FSL Moscow, inspect Observatory Point sale area re progress in road construction.
October 4	Carl Stoszek, Associate Professor, Forest Management, University of Idaho, and 20 members of the advanced silviculture class toured the PREF to observe active research projects. The tour was led by Charles Wellner.
October 16	L. Hudson, B. Betts and G. Gauzza, employed by the Archeological Survey, Cultural Resources Agency, completed the survey initiated previously.
October 23	Mike Larsen, Forest Products Lab., Madison, Wisconsin, spent three days wrapping up project seasonal work at PREF for RWU-3255, Timber Utilization Research.
October 24	Marvin Foiles and Malcolm Furniss, FSL Moscow, set up site site locations for WSU emtomology field tour.
October 28	Malcolm Furniss and 38 members of the entomology class, WSU, visited the experimental forest to collect samples for on site as well as classroom and laboratory studies as part of requirements of Forestry 348, at the University.

YOUTH CONSERVATION CORPS

The summer of 1978 was the sixth consecutive season that YCC inhabited the experimental forest facilities to participate in the program sponsored by the USDA and operated by Intermountain Forest and Range Experiment Station. Thirty-one enrollees completed the work-study-projects as set up in the pre-season plans.

It was necessary to modify the living quarters in order to comply with personnel increases. These projects are noted elsewhere in this report.

Following is the list of names of staff members and enrollees who participated in the 1978 program

Staff

W. Paige Ballard	YCC Program Manager
Rober Weisel	YCC Camp Director
Len Bauman	Work Projects Officer
Sue Kitt	Recreation Assistant
Nan Vance	Environmental Training Tech.
Connie Frances	Crew Group Leader
Dawn Peterson	Crew Group Leader
Reginald Stark	Crew Group Leader
John Morton	Crew Group Leader
Ron McMurtrey	Cook
Monica Juntilla	Cook

Enrollees

Duane J. Amundsen	Amy R. Tracy
Keith R. Barnhart	Penny S. Bennett
Gary L. Benefield	Christine L. Cronk
Michael J. Bugher	Jackie R. Ferree
Kenneth M Canterbury	Patty L. Graham
Robert E. Case, Jr.	Joni L. Hollenback
David J. Croskrey	Ruth E. Keith
Martin J. Grant	Karen M. Kirk
Robert S. Marsh	Pat Loftis
Darren McNutt	Kris Mathews
Kirk R. Moors	Lisa D. Moser
Tim D. Peterson	Kristie J. Moyer
James P. Roker	Julia J. Radtke
Jeffrey Schnider	Christine K. Rooper
J. D. York	Debra S. Spencer
Lettis Y. Weatherford	

Table 1.--Control station monthly precipitation and temperature - 1978. Figures in parentheses are 50-year (1912-1961) averages

Month	Precipitation	Temperature	
		Ave. Max.	Ave. Min.
	Inches	Degrees F.	
January	3.62 (4.02)	32.2 (30.3)	24.2 (16.6)
February	2.15 (3.09)	38.1 (36.4)	28.5 (18.3)
March	1.45 (2.65)	48.5 (45.3)	29.2 (23.5)
April	2.53 (2.04)	56.3 (57.6)	34.7 (29.6)
May	4.73 (2.18	62.0 (66.7)	39.0 (36.6)
June	1.22 (2.27)	76.4 (73.5)	45.7 (42.5)
July	3.41 (0.89)	81.2 (83.1)	50.9 (45.5)
August	2.98 (0.97)	76.0 (82.0)	48.9 (43.4)
September	1.73 (1.67)	66.3 (70.4)	44.4 (37.4)
October	0.25 (2.96)	58.9 (56.6)	31.8 (32.1)
November	2.48 (3.76)	35.0 (39.6)	24.1 (26.7)
December	1.46 (4.37)	25.3 (32.5)	15.7 (21.1)
Annual	28.01 (30.87)	54.7 (56.1)	34.8 (31.0)

Table 2.--Precipitation at three station on Benton Creek - 1978. Figures in parentheses are 19-year (1960-1979) averages

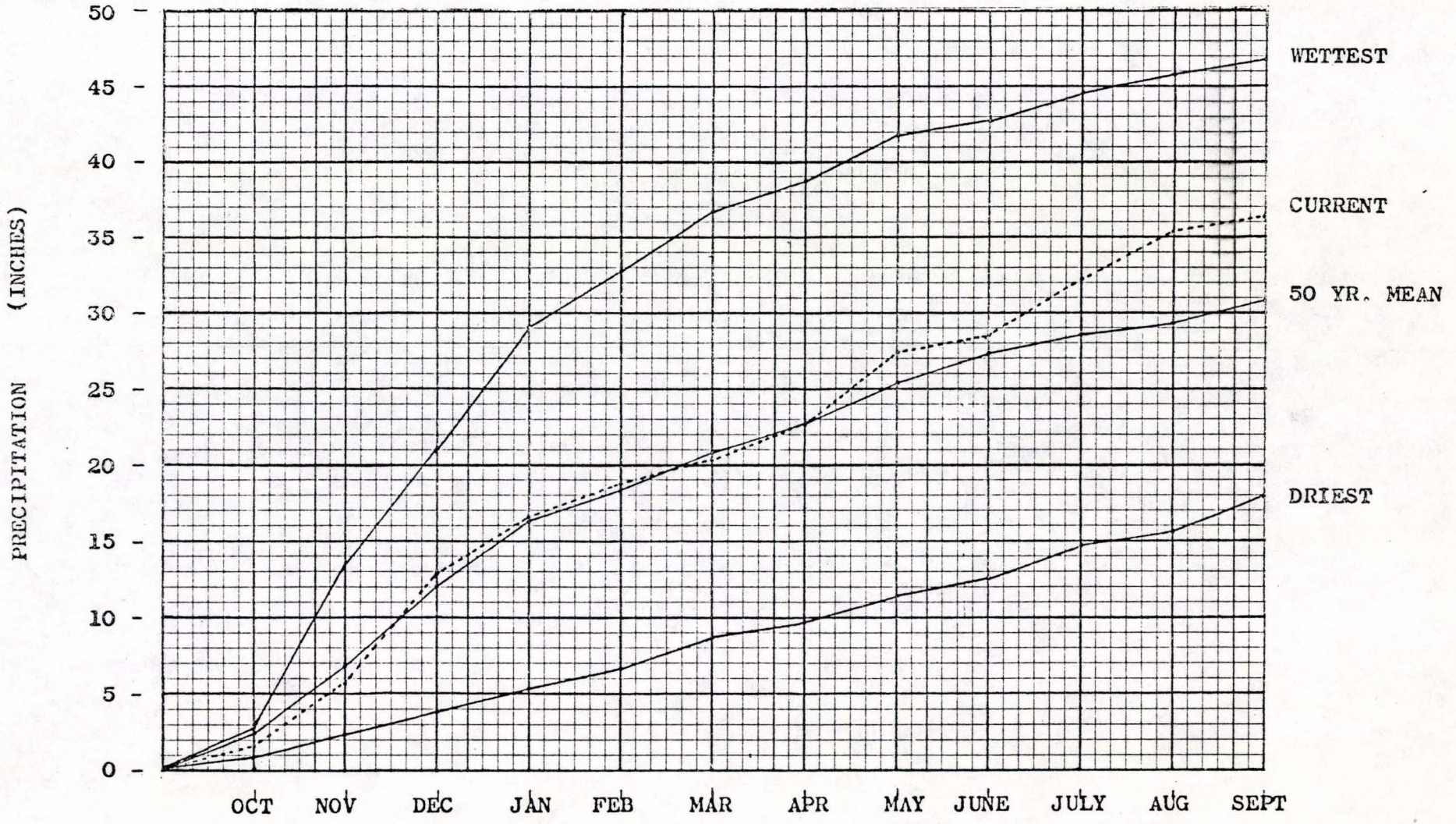
Month	Control Stn. Elev. 2344	Benton Dam Elev. 2640	Benton Spring Elev. 4775
		Inches	
January	3.62 (4.34)	3.76 (4.80)	3.40 (4.30)
February	2.15 (2.81)	2.43 (2.91)	2.60 (3.27)
March	1.45 (2.71)	1.45 (2.86)	2.30 (3.59)
April	2.53 (1.95)	2.67 (2.13)	2.50 (2.66)
May	4.73 (2.50)	5.33 (2.58)	6.90 (3.30)
June	1.22 (1.90)	1.35 (2.01)	2.10 (2.62)
July	3.41 (1.03)	3.10 (1.07)	2.80 (1.36)
August	2.98 (1.58)	3.68 (1.75)	4.20 (1.97
September	1.73 (1.54)	1.69 (1.54)	1.60 (1.76)
October	0.25 (2.18)	0.19 (2.11)	0.20 (2.42)
November	2.48 (4.54)	2.19 (4.56)	2.40 (4.62)
December	1.46 (4.67)	1.31 (4.88)	2.30 (5.25)
Total	28.01 (3.175)	29.15 (33.20)	33.30 (37.12)

Table 3.--Snow depth and water content for Benton Meadow and Benton Spring snow courses - 1978. Figures in parentheses are 25-year averages (1937-1961)

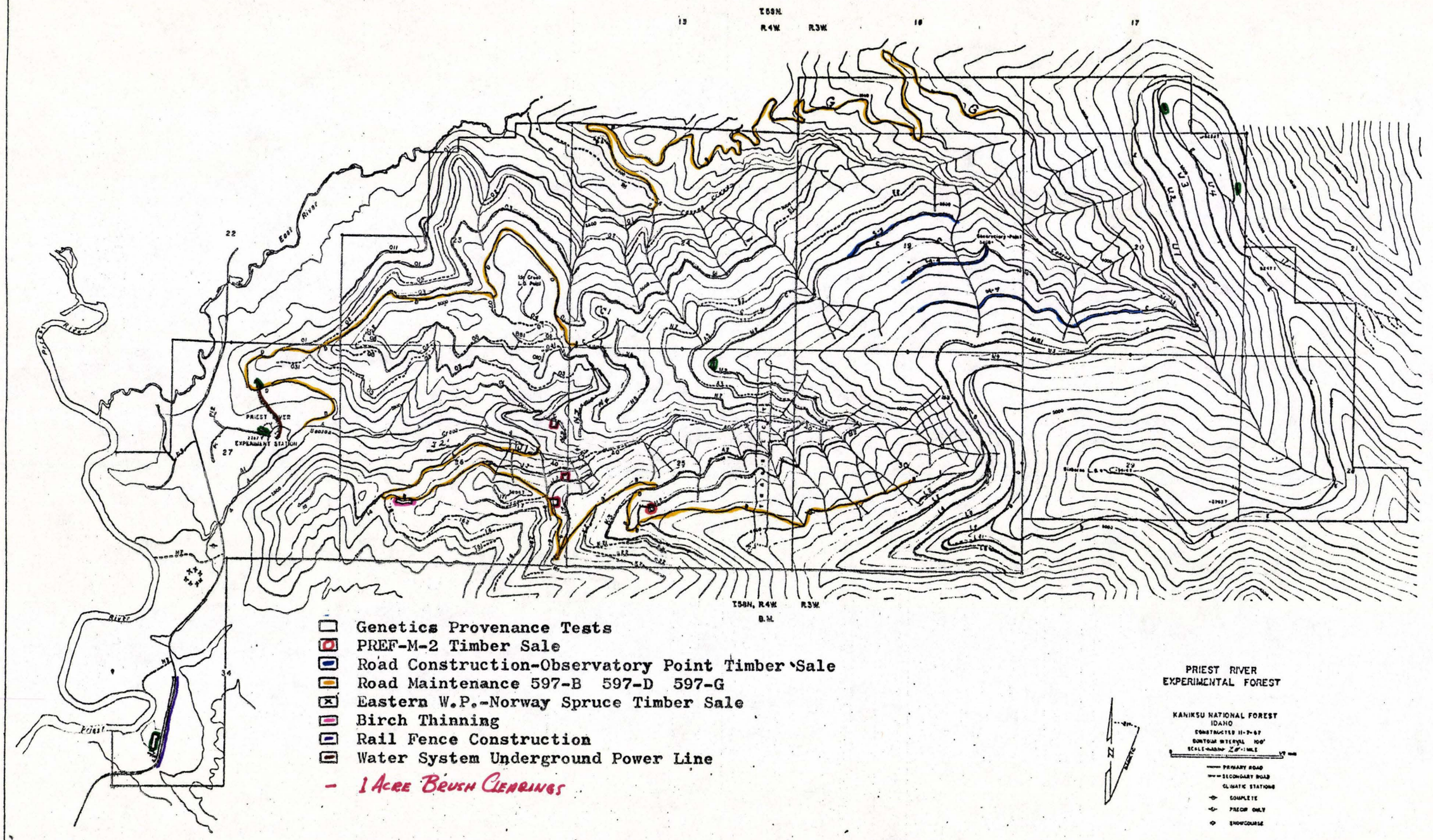
Month	Benton Meadows, Elev. 2344		Benton Spring, Elev 4775	
	Snow depth	Water content	Snow depth	Water content
January 1	23.0 (12.0)	5.2 (2.7)	39.9 (30.9)	12.0 (8.4)
February 1	24.1 (19.4)	6.3 (4.8)	50.0 (46.8)	15.8 (13.7)
March 1	20.5 (19.3)	6.8 (6.0)	51.8 (55.3)	18.0 (18.4)
April 1	03.7 (06.2)	1.4 (2.3)	39.5 (22.1)	16.7 (20.4)
May 1	00.0 (00.0)	0.0 (0.0)	24.4 (34.0)	10.7 (14.8)
June 1	00.0 (N.A.)	0.0 *(N.A.)	00.0 *(N.A.)	0.0 *(N.A.)

*No average

FIG. 1--CUMULATIVE PRECIPITATION FOR WATER YEAR, OCTOBER THROUGH SEPTEMBER
PRIEST RIVER EXPERIMENTAL FOREST, CONTROL WEATHER STATION



50 YEAR MEAN	1912-1961
WETTEST YEAR	1973-1974
DRIEST YEAR	1976-1977
CURRENT YEAR	1977-1978


T58N.
R4W.
R3W.
T58N, R4W
R3W.
B.M.
Genetics Provenance Tests
PREF-M-2 Timber Sale
Road Construction-Observatory Point Timber Sale
Road Maintenance 597-B 597-D 597-G
Eastern W.P.-Norway Spruce Timber Sale
Birch Thinning
Rail Fence Construction
Water System Underground Power Line
- 1 Acre Brush Clearings
PRIEST RIVER
EXPERIMENTAL FOREST
KANIKSU NATIONAL FOREST
IDAHO
CONSTRUCTED 11-7-67
CONTOUR INTERVAL 100'
PRIMARY ROAD
SECONDARY ROAD
CLIMATIC STATIONS
COMPLETE
PRECIP ONLY
SNOWCOURSE